PROFILE OF

YUCCA MOUNTAIN PROJECT

May 1996

Office of Oversight
Environment, Safety and Health
U.S. Department of Energy

FOREWORD

Site profiles provide senior Office of Environment, Safety and Health managers with relevant and current site environment, safety, and health performance information as well as communicating to Department of Energy line management the Office of Oversight's concerns and understanding of site conditions. Site profiles are a key management tool used by the Office of Oversight to focus and prioritize independent oversight evaluation activities and to optimize the allocation of Oversight resources. The Office of Oversight maintains site profiles on 20 major Department of Energy sites, and normally updates each profile semiannually through a process of soliciting Department of Energy line management review and comment on the revised site profile information. Upon resolution of any line management comments, the profile is considered validated and is disseminated.

Site profiles are developed using an institutionalized process of collecting data from multiple sources, and then collating, synthesizing, and analyzing this information to develop a balanced evaluation of environment, safety, and health performance at the site. The data that forms the basis of a site profile comes from sources both internal and external to the Department of Energy. Office of Oversight appraisal activities provide an important source of data. Data is also collected and synthesized from such sources as the Defense Nuclear Facilities Safety Board, the General Accounting Office, state regulators, and Department of Energy line management organizations. This information is reported in a format designed to highlight essential missions, performance, significant issues, and operational data at a management level. The process involves additional field verification of initial conclusions to confirm the validity and significance of the information. All Oversight offices participate in the collection, analysis, interpretation, and validation of site profile information.

As the site profile process matures, the Office of Oversight plans to incorporate additional information into the documents, including a presentation of quantitative measures and trends in environment, safety, and health performance, and a description of safeguards and security activities, performance, and issues.

PROFILE OF

YUCCA MOUNTAIN PROJECT (YMP)

OVERVIEW

SITE CHARACTERISTICS

Site characteristics include information on size and location, mission, organization, contractual status, and major initiatives and activities.

Additional information on site characteristics is provided in Section 1.0, starting on page 1.

Date Established: 1977.

Present Mission: Characterization of the Yucca Mountain site as a potential repository for high-level nuclear waste.

Size: 5,000 acres (7.8 square miles) on a 6,550 acre reserve (10.2 square miles).

Employees: There were 101 full-time and special program Department of Energy (DOE) employees at the Yucca Mountain Site Characterization Office (YMSCO) as of January 1, 1996. There were also approximately 1,000 other total site employees.

Annual Budget: The budget for fiscal year 1996 is $315 million. An additional $85 million was reserved from use pending enactment of separate authorizing legislation.

Cognizant Secretarial Officer: Office of Civilian Radioactive Waste Management (OCRWM).

Responsible Operations/Area Office: Yucca Mountain Site Characterization Office (YMSCO).

Management and Operations Contractor: TRW Environmental Safety Systems Inc. (TRW).

Fissile Material: None

Significant Commitments to Stakeholders: OCRWM has a Memorandum of Understanding (MOU) with TRW Environmental Safety Systems. The MOU between the U.S. Geological Survey (USGS) and the DOE sets forth the understandings achieved between the parties. The YMSCO maintains regulatory compliance liaison with Federal agencies, including the Environmental Protection Agency (EPA), U.S. Department of Interior National Park Service, U.S. Fish and Wildlife Service, the Bureau of Land Management, and the U.S. Conservation Service.

The YMSCO also coordinates with the following state agencies: Advisory Council on Historic Preservation, Nevada Division of Environmental Protection, State of Nevada Historic Preservation Officer, and the State Engineer. The Nuclear Waste Strategy Coalition filed suit against DOE to accept waste by 1998 and to force DOE to live up to its obligations.

Unions: Contracts with union locals include:

Twelve unions are represented at Yucca Mountain.

Operating Engineers (Local 12)
Insulators (Local 135)
Pipefitters (Local 525)
Electrical Workers (Local 357)
Sheet Metal Workers (Local 88)
Iron Workers (Locals 155, 416,& 433)
Teamsters (Local 631)
Painters (Local 159)
Carpenters (Locals 1780 & 1827)
Cement Masons (Local 797)
Laborers Tunnel Construction (Local 872)
Laborers Construction (Local 872)

Major Site Activities:

The major portion of exploratory studies facilities (ESF) activities involve design, construction, and operation of an underground laboratory at a depth where characterization testing is carried out.

Test facility activities are the tasks that support the viability assessment, most focusing on the day-to-day operation, maintenance, and general support to field activities, such as the ESF and surface-based testing program.

ES&H activities include ongoing environmental permitting compliance activities and completion of the environmental impact statement public scoping process.

Tunneling and drilling is a major activity.

ENVIRONMENT, SAFETY, AND HEALTH (ES&H) ISSUES

A sitewide issue is an issue present at multiple facilities or within ES&H programs that impact sitewide operations. A facility-specific issue is limited to a particular facility or building.

Additional information on sitewide issues is provided in Section 3.0, starting on page 6.

Sitewide Issue 1: If geological disposal is retained as a national strategy, site characterization costs must be reduced to a reasonable level, without jeopardizing technical rigor and safety.

KEY FACILITIES

A key facility is a facility or building that is significant from an environment, safety, and health perspective. At some sites, a key facility can be a group of facilities with similar missions, activities, hazards, or vulnerabilities.

Yucca Mountain - planned nuclear waste repository.

Additional information on key facilities is provided in Section 4.0, starting on page 7.

SITE PERFORMANCE

Site performance is based on an analysis of available data on facilities and programs. This includes information from Office of Oversight activities, augmented by valid and relevant external and internal sources. Site performance is evaluated in terms of three of the guiding principles for safety management.

Overall Safety Management Program - NOT EVALUATED

Principle #1 - Line Management Responsibility - NO T EVALUATED

Principle #2 - Comprehensive Requirements - NOT EVALUATED

Principle #3 - Competence of Personnel - NOT EVALUATED

Additional information on site performance is provided in Section 2.0, starting on page 5.

PERFORMANCE MEASURES

Performance measures are quantitative and qualitative indications of ES&H performance taken from such sources as the Occurrence Reporting and Processing System and the Computerized Accident/Incident Reporting System, as well as contractually mandated indicators of performance.

To be provided in future versions of the site profile

Additional information on performance measures will be provided in Section 5.0 of future versions of the site profile.

Figure 1. YMP Site Map

SITE PROFILE -- YUCCA MOUNTAIN PROJECT (YMP)

1.0 SITE CHARACTERISTICS

1.1 SITE LOCATION AND SIZE

The Yucca Mountain Project (YMP) is located on Federally owned land, situated about 90 miles northwest of Las Vegas, Nevada. Most of the site is on the Nevada Air Force Reservation (NAFR), managed by the United States Air Force; a small portion is on the Nevada Test Site (NTS), and is managed by the Department of Energy (DOE); and the remainder is on land administered by the Bureau of Land Management (BLM).

The NAFR, NTS, and BLM lands are withdrawn from public use, and unauthorized access would constitute an illegal trespass. Access to the NAFR and BLM lands was granted to DOE by a right-of-way reservation.

1.2 SITE MISSION

The YMP mission is to conduct site characterization studies for the storage and isolation of high-level radioactive waste.

The Nuclear Waste Policy Act (NWPA) of 1982 directed the formation of a high-level nuclear waste repository program. The Act was amended in 1987 to designate the YMP as the single location at which site characterization studies were to be conducted.

The studies at YMP are to determine whether the site is suitable for a potential high-level nuclear waste repository. These studies, collectively called site characterization, are divided into three types of scientific investigation (see Section 1.4, Studies).

The YMP is a new project with no existing Comprehensive Environmental Restoration Compensation and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA), or Clean Water Act corrective actions required from past practices. YMP does require air quality permitting under the Clean Air Act.

1.3 SITE ORGANIZATIONS AN D CONTRACT STATUS

Site Organizations

The Office of Civilian Radioactive Waste Management (OCRWM) is the lead program office for the YMP, and is responsible for implementing the NWPA of 1982. The NWPA amendments direct DOE to conduct site characterization solely at Yucca Mountain. No other secretarial office maintains programs on the site; however, the NTS, a Defense Programs (DP) site, provides landlord services to the YMP through a memorandum of understanding (MOU).

Initial work at the Exploratory Studies Facility (ESF), located at the YMP, resulted in a steady increase in the total number of onsite YMP workers and full-time employees. Growth continued through September of 1994. On October 1, 1994, the YMP entered a period of structural change. Based on reorganization and budget cuts, personnel strength declined. Change continued through the first quarter of 1995.

YMP is managed by the Yucca Mountain Site Characterization Office (YMSCO) located in Las Vegas, Nevada. YMSCO has approximately 1,882 employees, including approximately 100 DOE employees.

The YMSCO Assistant Manager for environment, safety, and health (ES&H), or AMESH, provides ES&H oversight functions. AMESH is responsible for establishing ES&H policies, developing S&H guidance, preparing implementation plans, and taking appropriate action to ensure acceptable ES&H performance.

TRW Environmental Safety Systems, as the management and operating (M&O) contractor, is responsible for performing design and analysis of the Civilian Radioactive Waste Management System (CRWMS); providing siting, design, and licensing services for the OCRWM-managed storage facility and the proposed geologic repository; developing the transportation system; supporting environmental compliance and field programs, including meteorology, and radiological monitoring; supporting radiological, sociological, and environmental programs; supporting land access and work associated with material laboratory analysis; providing non-destructive examination services, field surveying, procurement, and logistical services for the YMP as requested; and operating the technical database for all Yucca Mountain physical information.

The following organizations support and report to the M&O contractor on YMP activities:

- Sandia National Laboratory (SNL)
- Lawrence Livermore National Laboratory (LLNL)
- Los Alamos National Laboratory (LANL)
- Lawrence Berkeley National Laboratory (LBNL)
- Kiewit/Parsons Brinkerhoff (K/PB)
- U.S. Geological Survey (USGS).

In late September, OCRWM took action to reduce activity in the program from the fiscal year level of $522 million to $400 million, consistent with the continuing resolution. This action primarily affected the work at the YMP in Nevada, as constrained in the pending Congressional appropriation.

Congress ultimately appropriated $400 million for the program, but reserved $85 million from use pending enactment of separate authorizing legislation. The level of funding available to the program is $315 million, which will require some reduction in activity and contractor staff support.

Contract Status

Operation of YMP is primarily governed through a contract between OCRWM and the M&O) contractor. The ES&H portion of the contract is defined in DEAR 970.5204-2 Work authorization directives, initiated by YMSCO, also provide technical direction to the M&O contractor.

1.4 MAJOR SITE INITIATIVES/ACTIVITIES

Project Management

Project management activities are conducted in accordance with the following project priorities: statutory and regulatory requirements and DOE policy, initiatives and directives. Cost-of-business activities are not prioritized. The following project management products and services are listed by project/management and compliance priority categories:

1. Statutory and regulatory requirements, laws, and regulations, including financial management and configuration management and change control board.

2. DOE policy, initiatives, and directives, including integrated planning, cost/schedule project control, planning and control system, and direct YMSCO support.

Cost-of-business activities, which include technical project management, are not prioritized.

Scientific Investigations

Most site investigations support the viability assessment by providing input to design activities for testing hypotheses associated with the waste isolation strategy and for the total system performance assessment. Site investigation data collection associated with the ESF and alcove construction is included to capture data potentially irretrievable, if not collected at the time of excavation.

Exploratory Studies Facilities

The ESF provides support to the viability assessment and license application as defined in the Program Plan and modified by the CRWMS M&O fiscal year 1996 proposal In fiscal year 1996, the focus is on supporting viability assessment by providing access and supporting systems to test locations in the North Ramp and the Main Drift.

A major portion of ESF activities involves design, construction, and operation of an underground laboratory at a depth where characterization testing is carried out. The ESF is intended to be this laboratory. Initial construction activities on the ESF began late in fiscal year 1993 with site preparation. In fiscal year 1994, activities included continuing site preparation, building construction and utility installation, constructing the north ramp portal, and designing the underground facility. In fiscal year 1995, activities included the start of tunnel boring, continuation of surface building constructions and utilities installation, installing the muck handling system, and continuing the underground design.

Test Facilities

Test facility activities are the tasks that support the viability assessment, most focusing on the day-to-day operation, maintenance, and general support to field activities, such as the ESF and surface-based testing program. Tasks are generally not directly tied to program or project milestones; rather, they are intended to provide operational and technical support in accomplishing other program discrete goals and objectives.

To successfully provide appropriate operational and technical support to the field activities, test facilities adhere to the following priorities:

- Site operations and maintenance
- General and administrative support to field activities
- Design and construction or rehabilitation of support facilities.

Environment, Safety, and Health

Fiscal year 1996 ES&H activities are prioritized as follows:

1. Provide protection for the environment, the health and safety of project employees and members of the public, and project facilities and equipment.

2. Continue ongoing environmental permitting compliance activities; hazardous materials management and waste minimization efforts; monitoring for air quality, radiological, terrestrial ecosystems, cultural resources, regional studies, and monitoring for water resources in support of the environmental compliance program, and the limited site characterization program.

3. Complete the environmental impact statement public scoping meetings and comment period.

Tunneling

The Yucca Mountain Site Characterization Project presents no significant radiological vulnerabilities to the environment. Operations consist primarily of tunneling and drilling .

The Yucca Mountain Site Characterization Project uses special equipment and facilities to construct two ramps and underground test facilities in accordance with design specifications. The tunnel boring machine (TBM) is the key piece of machinery used for excavation. The TBM excavates a circular opening (about 25 feet in diameter), and is considered one of the most effective means of rapid excavation for underground tunneling As of February 27, 1996, the TBM had tunneled 4,300 meters, or 14,107 feet.

The basic means of excavating is a full face, rotating cutter head that consists of a series of disc cutters that track at a predetermined

radius about the center of the cutter head. The spacing of the tracks, and consequently the disc cutters, is a function of rock strength, quality, and composition. The rotating cutter head is thrust at the rock face by means of hydraulic thrust cylinders and gripper heads. The grippers, located behind the cutter head, are pushed out from the TBM to "grip" the tunnel walls. The thrust cylinders push the cutter head forward. After the thrust cylinders reach their maximum extension of 5 feet, the grippers are retracted and the thrust cylinders are retracted, pulling the entire TBM forward for the next cut.

As the TBM skid advances, utility services are put in place. This integrated approach allows nearly continuous tunneling efforts. The entire TBM is electrically driven and uses hydraulics for its various components.

Other methods of excavation, such as alpine miner/road header excavator or drill and blast operations are typically expected in tunneling operations.

Construction

If Yucca Mountain is found satisfactory as the nations' long-term repository for high-level waste and spent nuclear fuel, the resultant vulnerabilities would be those consistent with the handling, storing, and transportation of radioactive material. These vulnerabilities are mitigated by the use of facilities designed and approved for this purpose. Yucca Mountain will be built and licensed as an Nuclear Regulatory Commission (NRC) facility and has no maintenance backlog. The design will go through a review and approval process prior to NRC licensing.

Construction of the facility was extremely slow during the first stages, but is now ahead of schedule. The facility has no past operating history related to its designed use.

The ESF is currently in theconstruction phase and is not currently considered an operating facility.

The ESF surface and subsurface facilities are being constructed and are configured to support the construction and site characterization programs.

The YMP is a new project with no existing environmental remediation projects resulting from past operations.

National Environmental Policy Act (NEPA) Compliance

YMP issued a notice of intent to develop an environmental impact statement (EIS) to assess the environmental impact associated with the proposed repository. A record of decision is anticipated in the year 2000. The repository EIS is intended to address the suitability of YMP in terms of the environmental, socioeconomic, and transportation guidelines in 10 CFR 960.

Studies

Studies are being conducted at YMP to determine whether the site is suitable as a high-level nuclear waste repository. These studies, collectively called site characterization, are divided into three types of scientific investigation: (1) surface-based testing, including analyzing rock and soil samples and water movement; (2) subsurface testing, including examining rock at deep levels; and (3) laboratory analyses, encompassing analyzing rock, liquid, and gas samples collected from surface-based and underground test activities. Information from these studies will be used to evaluate the site as a potential repository.

DOE is required by law to conduct characterization with as little impact to the environment as practicable. The YMP area has a desert ecology that is home to at least one threatened species, the desert tortoise. To ensure minimal harm to the environment, YMP launched a number of field programs before site characterization began. Many of these field programs are conducted by permit only and strictly comply with local, state, and federal regulations.

2.0 SITE PERFORMANCE

2.1 CONCEPTUAL BASIS FOR EVALUATION

The essential characteristic of successful programs and projects is the recognition and understanding of the need for an effective management system that ensures adequate control over all aspects of the program or project. In 1994, the Secretary of Energy forwarded to Congress and the Defense Nuclear Facilities Safety Board (DNFSB) the principles and criteria that the Department deemed necessary for an effective safety management program. These principles include:

- Principle #1: Line managers are responsible and accountable for safety.
- Principle #2: Comprehensive requirements exist, are executed, and are appropriate.
- Principle #3: Competence is commensurate with responsibilities.

2.2 SAFETY MANAGEMENT PROGRAM IMPLEMENTATION OF THE GUIDING PRINCIPLES

This interim evaluation was developed using the results of surveillances performed by the Office of EH Residents and other Office of Oversight data sources. The absence of an independent oversight evaluation at YMP suggests that the information presented should not necessarily be considered representative of overall ES&H performance across YMP, but rather an indication of ES&H performance of the program and/or facility identified. Where sufficient information was not available to make a comprehensive assessment of either the implementation of a guiding principle (Section 2.2) or an implementing program (Section 2.3), a limited evaluation or specific example of performance based on the best available information is provided.

Principle #1 - Line Management Responsibility for Safety

Not evaluated.

Principle #2 - Comprehensive Requirements

Not evaluated.

Principle #3 - Competence Commensurate with Responsibilities

Not evaluated.

2.3 IMPLEMENTING PROGRAMS

Environmental Protection Program

To ensure minimal harm to the environment, YMP launched a number of field programs before site characterization began. Many field programs are conducted by permit in strict compliance with local, state, and Federal regulations. In addition, YMP is developing an environmental impact statement.

Nuclear Safety Program

Not evaluated.

Worker Safety and Health Program

The regional Federal Occupational Safety and Health Administration (OSHA) office has written a letter to the State of Nevada's OSHA office stating that DOE has jurisdiction for the YMP.

YMSCO has implemented a safety and health program.

A review of Computerized Accident/Incident Reporting System (CAIRS) data showed that injury/illness, property damage, and vehicle loss rates are all above the averages for DOE and all its contractors averages, but below the Bureau of Labor Statistics averages, for the first nine months of 1995. In particular, YMP's property loss rate was notable compared to the rest of DOE and its contractors (7.79 compared to .07).

Facility Safety Program

A review of occurrence reports during the period 1993 to 1995 showed that occurrences have remained constant at approximately 18 per year for each of the last three years; most occurrences have involved Reynolds Electrical and Engineering; conduct of operations and environmental activities comprise the two largest nature of occurrence subcategories; and the most common root cause of the occurrences was personnel error, with inattention to detail being a common thread. The most common types of occurrences were unplanned power outages/power failures (8), diesel fuel spills/leaks (6), fires (3), and tunnel ventilation (1).

EH Resident surveillances during 1995 favorably commented on the access control process at the ESF pad and tunnel portal, the haulage system, the K/PB electrical safety training tracking system, and lockout/tagout of equipment from energy sources. Conversely, EH Resident surveillances identified deficiencies in the electrical system lockout/tagout logbook, the work control system for installation of temporary electrical systems, and the process for lifting steel set lagging from the tunnel floor to the drilling platform

3.0 SITEWIDE ES&H ISSUES

3.1 ISSUE DESCRIPTIONS

Sitewide Issue 1: Safety Implications of Budget Constraints

If geological disposal is to be retained as a national strategy, site characterization costs must be reduced to a reasonable level, without jeopardizing either technical rigor or the assurance of safety.

A streamlined and more efficient approach to site characterization is needed. An approach that is carefully focused on assessing the safety of a specific repository and waste package design, in a specific geologic setting, supported by a regulatory framework that has the same focus, may help reduce the scope of the project. An approach with these

characteristics may result in a lower expenditure level than envisioned in the 1994 Program Plan, and could lead to a license application by 2002.

3.2 SITEWIDE ISSUE STATUS

Table 1 characterizes sitewide issues in terms of an issue statement, primary concerns, site activities, and a progress evaluation.

4.0 KEY FACILITIES

4.1 FACILITY MISSION

The December 1994 Program Plan identifies the YMP major milestone as an evaluation of the technical suitability of the Yucca Mountain site in 1998, and, if the site proves suitable, a continued effort leading to submission of a license application in 2001, with initial waste emplacement in a repository by 2010. Based on an approach designed to achieve these milestones, Congress provided a substantial increase in program funding for fiscal year 1995, with the majority of that increase going to site characterization efforts.

Since the 1994 Program Plan was prepared, two major developments have led to significant revision of the project strategy.

First, progress in the scientific evaluation of the site has exceeded the original goals and expectations. YMP overcame the initial difficulties in tunneling and has made significant progress in constructing the underground test facility. YMP demonstrated the feasibility of constructing a repository in late 1995 and permitted the engineers and scientists to begin direct observation and testing within the proposed repository area. Upon testing they found that the rock at the repository level is more competent than had been anticipated; no unexpected geologic features; the repository is even drier than expected, with no water dripping or flowing into the excavation; and the data collected and analyzed support the hypothesis that a limited ground water flow has occurred for 100,000 years or longer. These important findings will allow YMP to focus its testing on those relatively few remaining issues that are important to the design and long-term performance of a repository.

Second, the congressional curtailment of funding in fiscal year 1996 made a fundamental revision necessary. The YMP's funding level was reduced by 33 percent from $375 million in fiscal year 1995 to $250 million in fiscal year 1996. Reductions in the program's current and anticipated budgets made the approach described in the 1994 Program Plan no longer feasible.

Congress, recognizing that the significant reduction in program funding would require a restructuring of the repository activities, directed the program to concentrate on core scientific activities, excavation of the ESF, and completion of conceptual designs for the repository and waste package. The Program was also directed to defer preparation and submittal of a license application.

Revised Project Strategy Objectives

The objectives included producing a viability assessment by 1998, reducing the scope of site characterization, and updating the regulatory framework for the repository.

Producing a Viability Assessment by 1998

Consistent with guidance from the President and Congress, a 1998 milestone was

Table 1. Sitewide Issues

SITEWIDE ISSUE	PRIMARY CONCERNS	SITE ACTIVITIES	PROGRESS EVALUATION
1. Site characterization costs must be reduced to a reasonable level, without jeopardizing technical rigor or safety if geological disposal is retained as a national strategy.	Staff reductions. Expectations from oversight organizations. Nevada Test Site services. Site characterization program re-structuring impacts.	YMSCO is six months into a new fiscal year, operating under a reduced budget that required restructuring of the site characterization program.	Not evaluated. **(updated 5/96)**

assigned for completing a viability assessment for the Yucca Mountain Site Characterization Project. This assessment presents management's judgment concerning the prospects for geologic disposal at the Yucca Mountain site. This assessment will be used to support future project policy decisions. An important part of the assessment will be the estimated costs, required after 1998, to complete a license application.

Reducing the Scope of Site Characterization

Since 1993, the project has excavated over two miles of underground tunnel and four testing alcoves, drilled seven deep and 19 shallow boreholes, and excavated 13 trenches for geologic investigations. Project scientists and management believe that a reduction in the scope of the characterization program is justifiable. This belief is supported by the progress made in the characterization program and realignment of the licensing expectations based on obtaining information at different phases of the program.

Updating the Regulatory Framework for the Repository

Work to date has demonstrated to YMP and external experts who oversee the project, such as the Nuclear Waste Technical Review Board, the National Academy of Sciences, and the Advisory Committee on Nuclear Waste, that YMP can be more focused and efficient by taking a performance-assessment approach toward characterization. YMP will propose revisions to 10 CFR Part 960 that provide for such an approach.

There are presently no Price-Anderson regulatory actions at YMP.

4.2 FACILITY SUMMARY

Table 2 summarizes key facility characteristics, including status, hazard classification, authorization basis, worst case design basis accident, and principle hazards and vulnerabilities. Unless otherwise noted, worst case design basis accidents were not available. The data in this column of the table represent an unmitigated event, using the highest risk, highest consequence preliminary hazard analysis scenario.

5.0 PERFORMANCE MEASURES

This section is under development and will be presented in future versions of the site profile.

Table 2. Facility Summary

FACILITY NAME	STATUS	HAZARD CLASSIFICATION/ AUTHORIZATION BASIS	WORST CASE DESIGN BASIS ACCIDENT	H A
Yucca Mountain	The ESF is in the construction phase supporting characterization by providing access to the underground tuff horizon to determine its suitability for potential storage of high- level nuclear waste generated primarily from the nation's nuclear power industry. The site arrangement, both surface and underground, is presently being constructed to provide for the various activities that will occur during the construction phase, and the operational in site testing program. The ESF surface facilities are being constructed and configured to provide necessary support to the construction, mining, and site characterization programs.	The safety basis consists of a preliminary safety analysis report and job hazard analysis for the various construction activities.	When operational, an explosive accident, resulting in a radioactive release to the environment. Not applicable during construction.	**Ha** inc as un gr ac